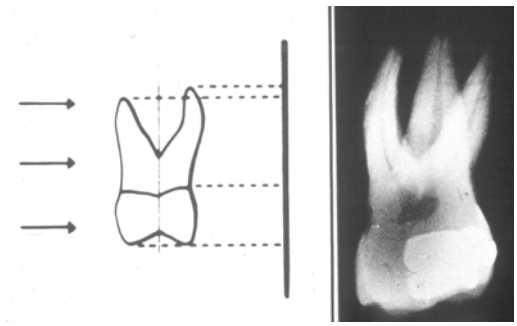
Paralleling Technique

Patient Preparation:

Seat patient

Adjust headrest

Place lead apron, thyroid collar



Long axis of the tooth <u>parallel</u> with long axis of the film

Paralleling Technique

ADVANTAGES

(compared to Bisecting Angle technique)

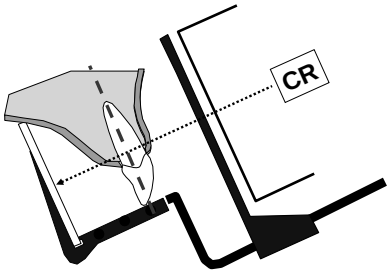
1. **Better dimensional accuracy**
2. **Beam alignment simplified**
3. **Easier to standardize films**
4. **Head position not critical**

Paralleling Technique

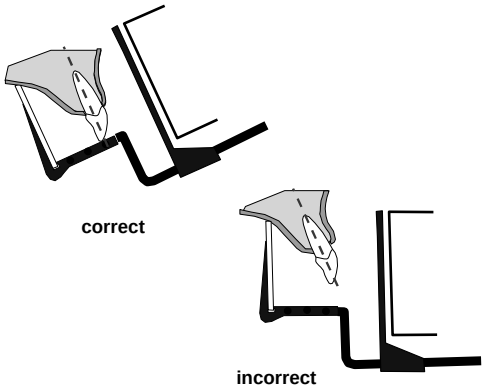
DISADVANTAGES

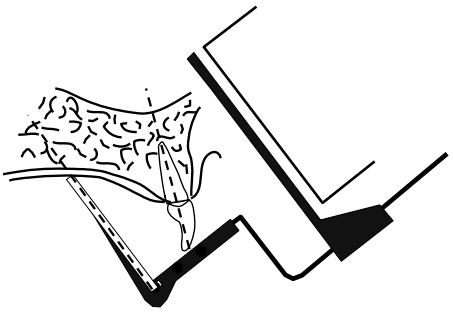
(compared to Bisecting Angle technique)

1. **Uncomfortable**
2. **Limited by anatomy**

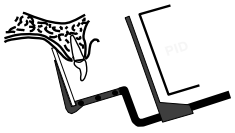


Film/tooth/ring all parallel
Central ray perpendicular to tooth/film



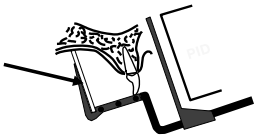


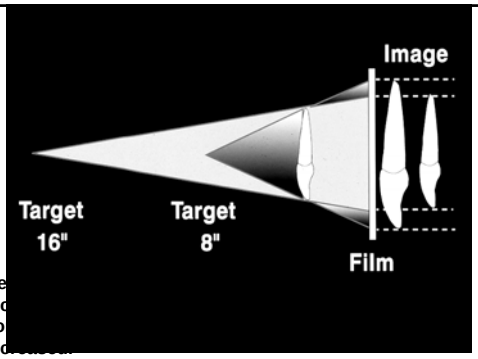
The film may be tipped up to 20 degrees beyond parallel



Because the palate and floor of the mouth are shallower as you approach the lingual of the teeth, the film cannot be positioned properly close to the teeth

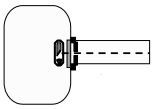
Film positioned away from teeth to achieve parallelism



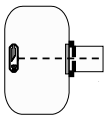


Be
inc
co
inc

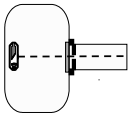
To compensate for this, the target-film distance should be increased.



Long PID (cone)
XCP



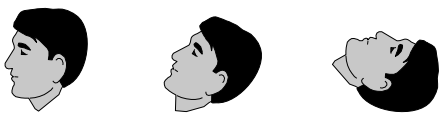
Short PID
Recessed target



Medium PID
Recessed target

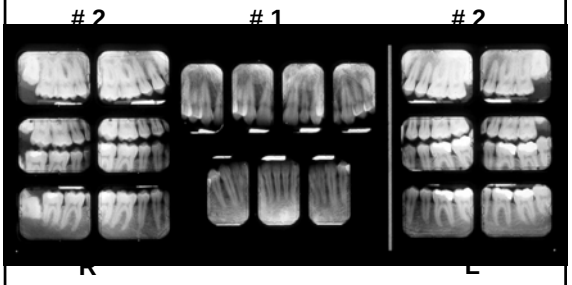
Paralleling Technique

Head Position

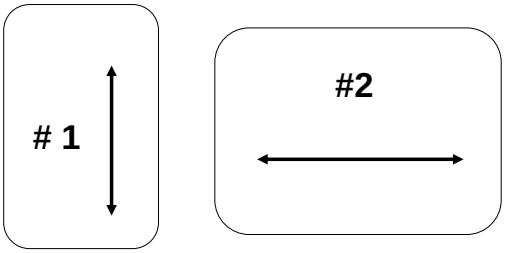


Best OK OK

Adult full-mouth series, Paralleling Technique

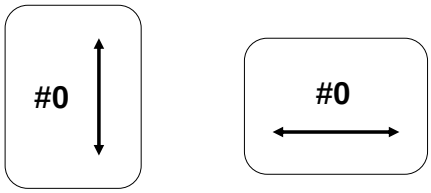


Adults



anterior posterior

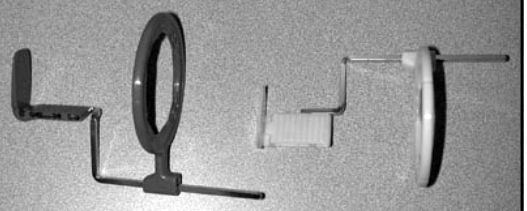
Children



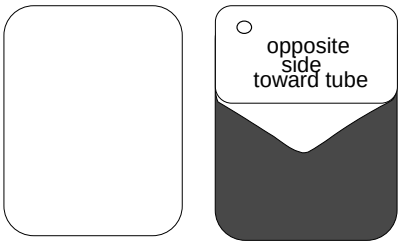
anterior posterior

Use #1 (anterior) or #2 (posterior) if child's mouth is large enough to accommodate them

Rinn XCP Paralleling Instruments



ANTERIOR POSTERIOR

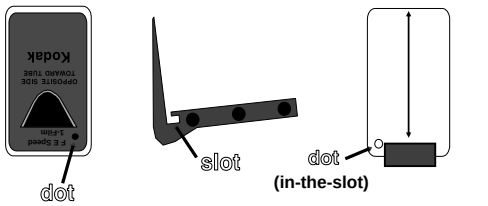


front back

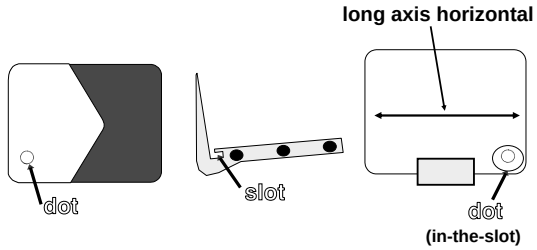
faces teeth/ring

Anterior Periapical

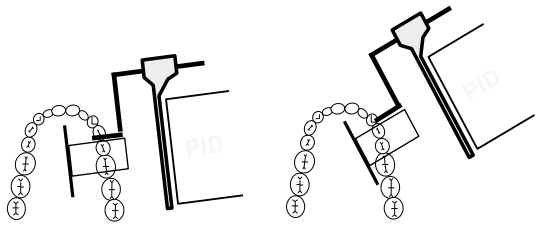
long axis vertical



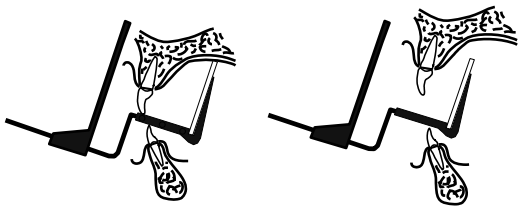
Posterior Periapical



The film should be equidistant from the teeth in an anterior-posterior direction

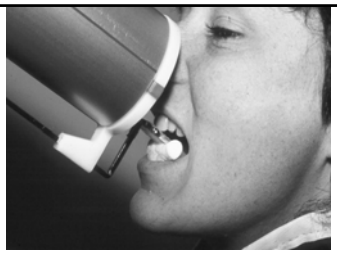


correct **incorrect results in overlap**

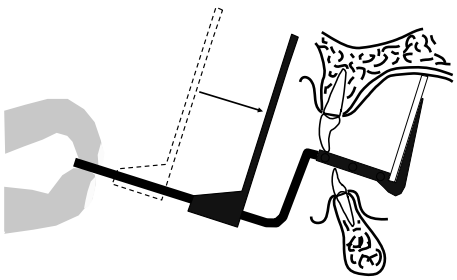


correct **incorrect**

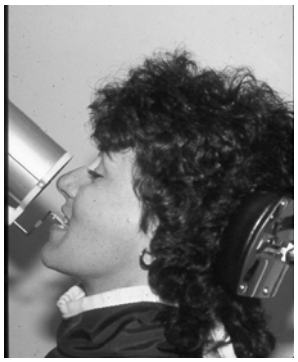
The teeth being radiographed must be in contact with biteblock.



Cotton rolls may be used in any area of the mouth to help support the biteblock, especially if an edentulous region opposes the teeth being radiographed; often makes it more comfortable for the patient. The cotton roll should be placed against the arch opposite to the one being radiographed.

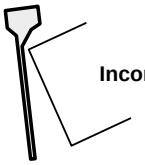


While supporting the bar with the fingers of one hand, slide the ring down close to the face with the other hand.

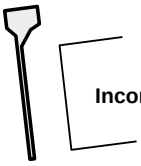


Make sure head is supported by headrest before exposing films.

Incorrect

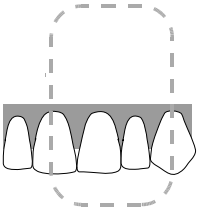


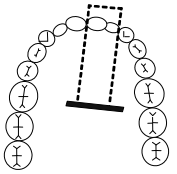
Incorrect



The PID should be equidistant from the ring and within ¼" of the ring

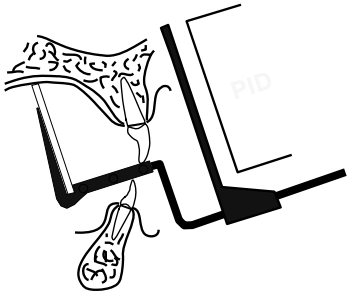
Maxillary Central-lateral





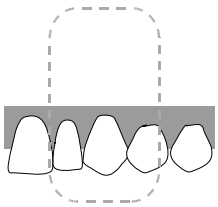
Film centered on contact between central and lateral incisors. Make sure mesial edge of film crosses midline slightly. Film should be placed well back in the mouth, away from the teeth.

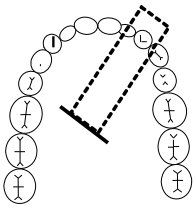
Maxillary Central-lateral



If # 2 size film is used, the film is centered on the midline. Only one film is used to image all the incisors.

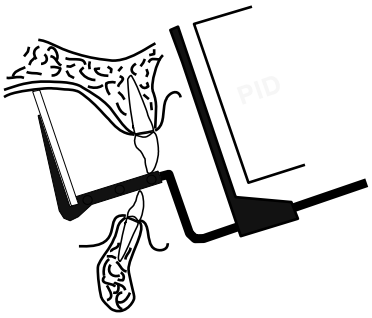
Maxillary Canine

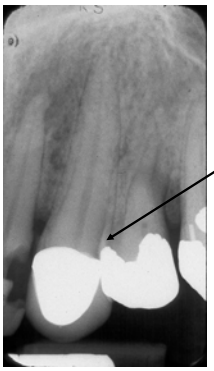




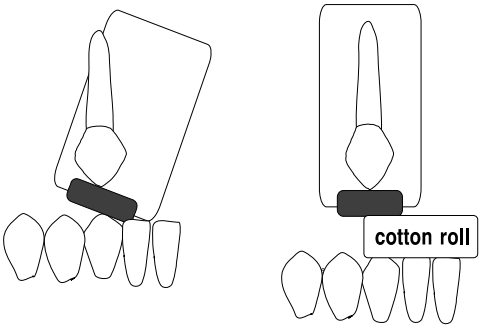
Film centered on canine. Film should be placed well back in the mouth, away from the teeth.

Maxillary Canine

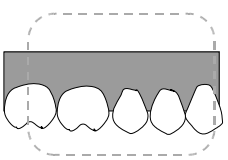


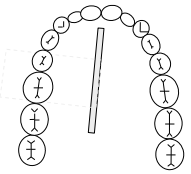


Note overlap between canine and first premolar. Usually not avoidable in maxillary canine region using paralleling technique.



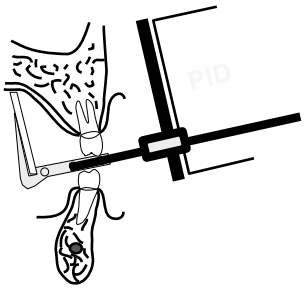
Maxillary Premolar

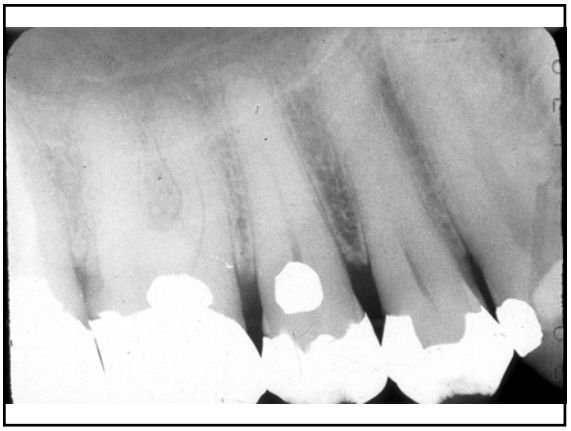




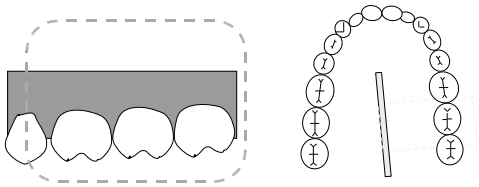
Film positioned so that anterior edge is at least in the middle of the canine, or more anterior if possible. Approximately centered on 2nd premolar. Top edge of film in center of palate.

Maxillary Premolar



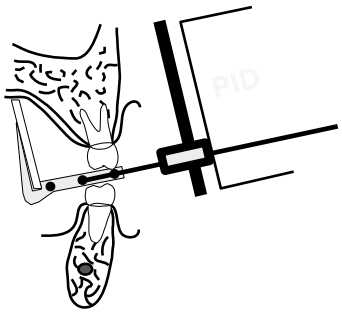


Maxillary Molar

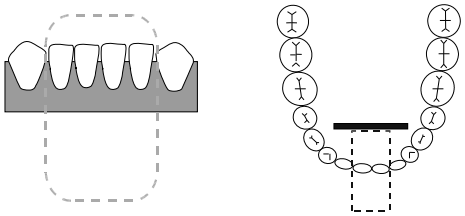


Film centered on second molar. Top edge of film in center of palate.

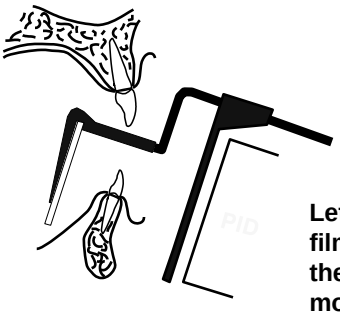
Maxillary Molar



Mandibular incisor

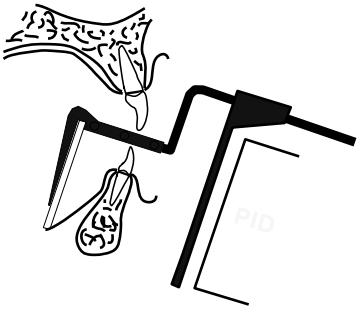


Film centered on midline. Film should be placed away from the teeth as much as possible.

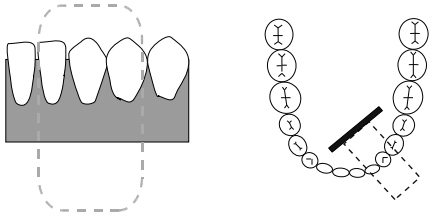


Let patient guide film into place as they close their mouth

Mandibular incisor

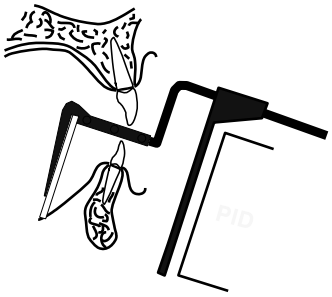


Mandibular Canine

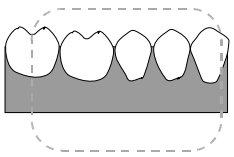


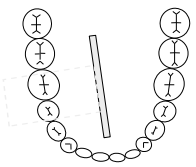
Film centered on canine. Film should be placed away from the teeth as much as possible.

Mandibular Canine



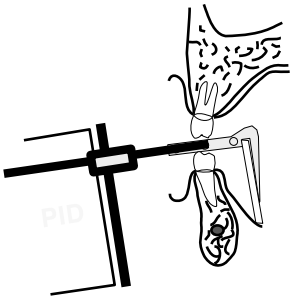
Mandibular Premolar



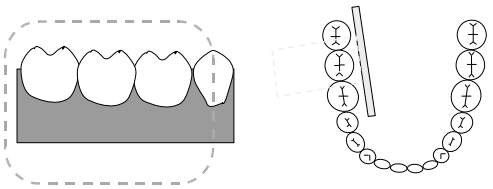


Anterior edge of film is positioned at least in the middle of the canine, or more anterior if possible. Approximately centered on 2nd premolar. The film should be placed more toward the middle of the mouth, away from the teeth. This is usually the most uncomfortable film taken on a patient using the paralleling technique.

Mandibular Premolar

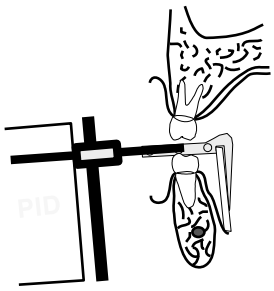


Mandibular Molar



Film centered on second molar. Film may be placed next to the teeth.

Mandibular Molar

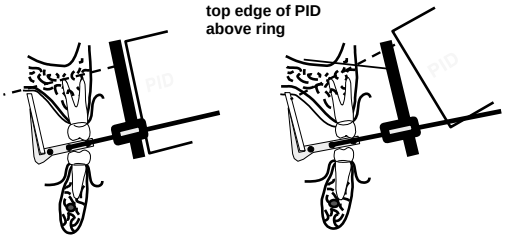


For patients with long roots:

Normal alignment misses apices

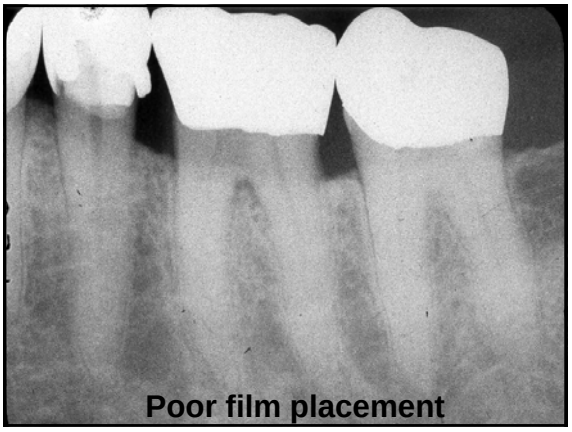
Increase vertical Raise PID

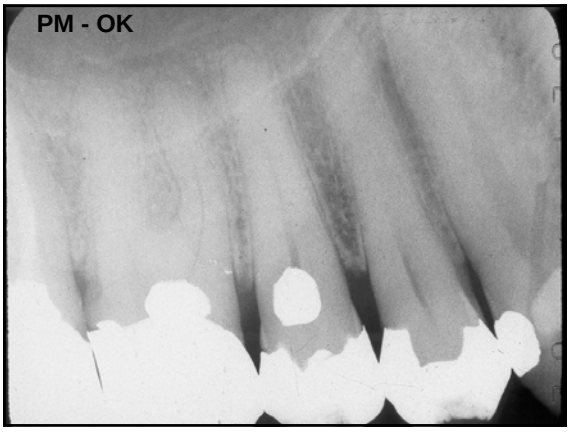
top edge of PID above ring

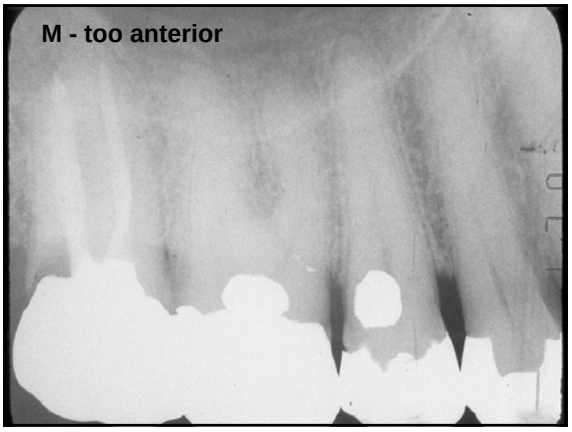


Paralleling Technique

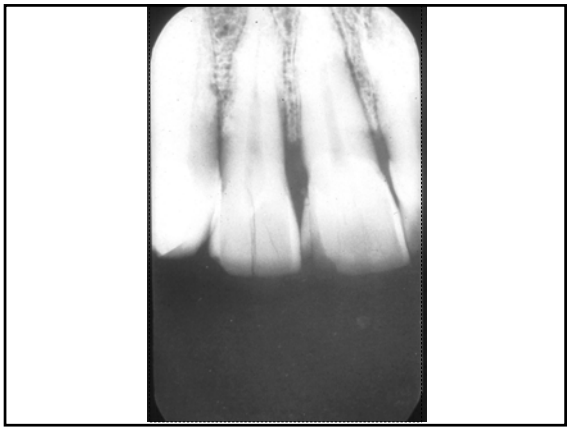
ERRORS


Poor film placement

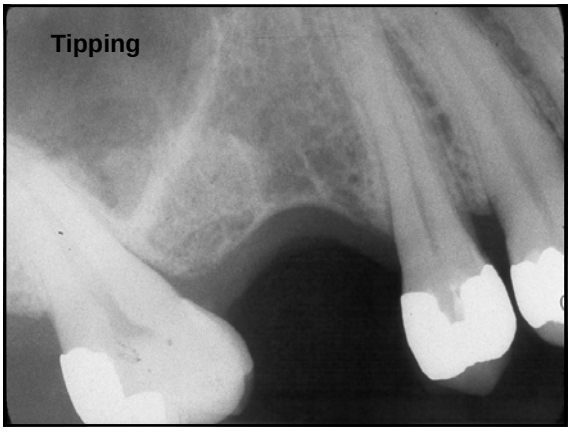

PM - OK

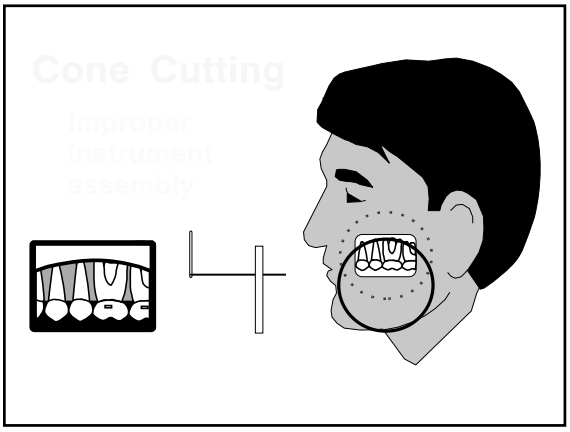

M - too anterior

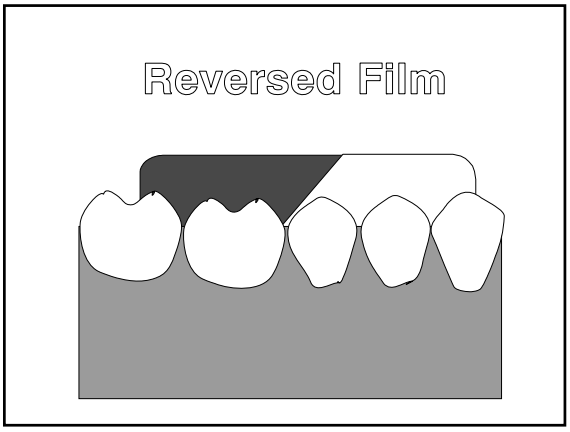

Patient not biting
on biteblock

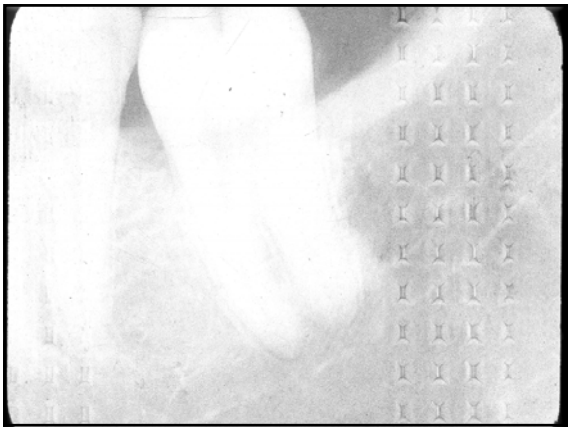


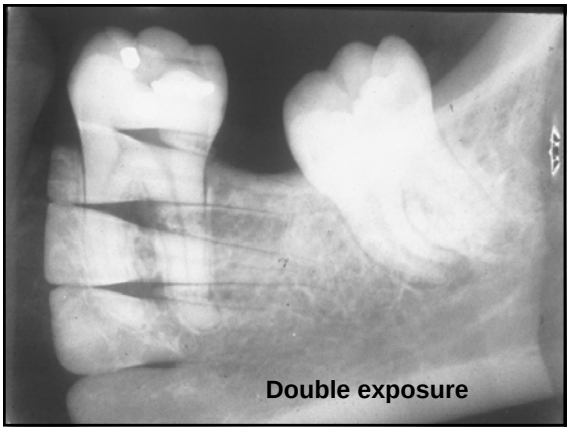

Tipping

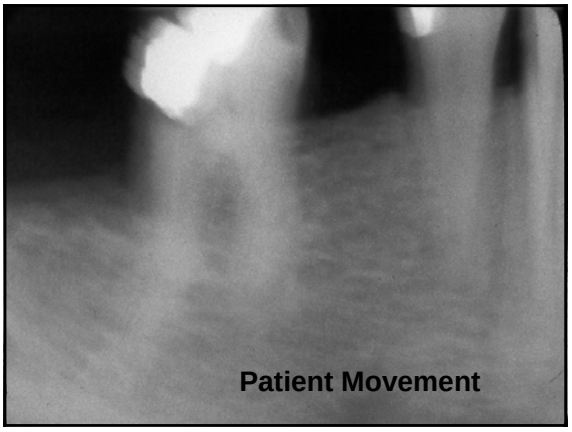

Tipping

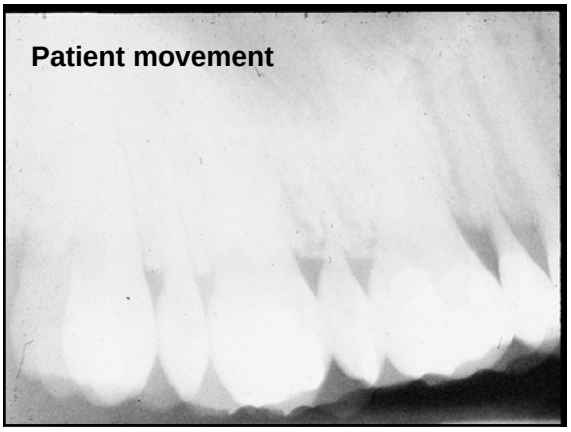

Cone Cutting
Improper
Instrument
assembly

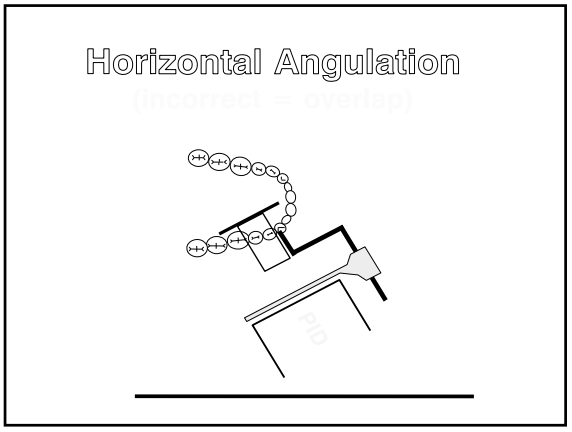

Reversed Film

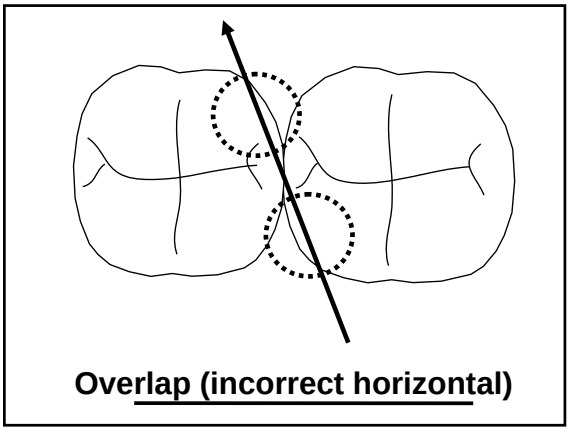


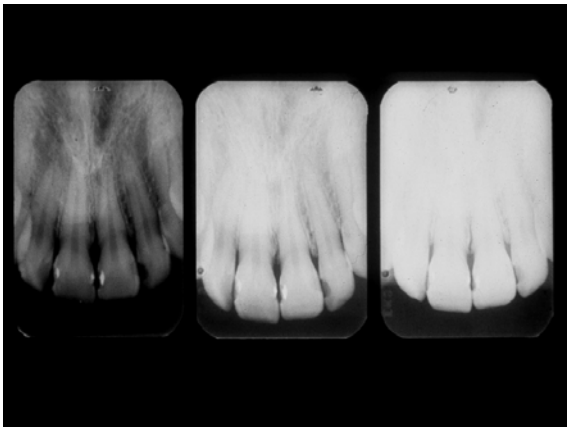

Double exposure

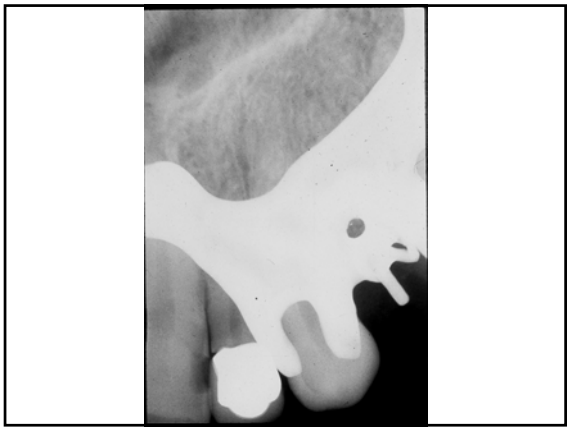

Patient Movement


Patient movement


Horizontal Angulation
(incorrect = overlap)


Overlap (incorrect horizontal)





Paralleling Film Placement

- Film size: # 1 ant., # 2 post.
- Film holder: Rinn XCP
- White-on-white
- Dot-in-the-slot
- Vert. anterior, hor. posterior
- Correct ant.-post. placement

Paralleling Film Placement

- Equal tooth-film distance
- Biteblock in contact
- Cotton roll for stability (opposite arch)
- Ring close to skin